PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: A61C 8/00 **A1**

(11) International Publication Number:

WO 99/23971

(43) International Publication Date:

20 May 1999 (20.05.99)

(21) International Application Number:

PCT/SE98/01982

(22) International Filing Date:

3 November 1998 (03.11.98)

(30) Priority Data:

9704112-3

11 November 1997 (11.11.97) SE

(71) Applicant (for all designated States except US): NOBEL BIOCARE AB (publ) [SE/SE]; P.O. Box 5190, S-402 26 Göteborg (SE).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): CARLSSON, Lennart [SE/SE]; Matildebergsgatan 36, S-431 38 Göteborg (SE). ENGMAN, Fredrik [SE/SE]; Häggvägen 19, S-435 37 Mölnlycke (SE). FROMELL, Roger [SE/SE]; Malörtsvägen 11, S-449 33 Nödinge (SE). JÖRNÉUS, Lars [SE/SE]; Riabergsvägen 7B, S-430 30 Frillesås (SE).
- (74) Agent: OLSSON, Gunnar, Nobel Biocare AB (publ), P.O. Box 5190, S-402 26 Göteborg (SE).

(81) Designated States: AU, BR, CA, IL, JP, MX, NO, PL, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

In English translation (filed in Swedish).

(54) Title: ARRANGEMENT FOR OBTAINING RELIABLE ANCHORING OF A THREADED IMPLANT IN BONE

(57) Abstract

In an arrangement for obtaining reliable anchoring of a threaded implant (3) in dentine, a hole (2) is made in the bone substance. In the side wall (2b) of the hole it is possible to establish an internal threading which can cooperate with an external threading (3d) on the implant. The implant threading is arranged to force the bone substance out in essentially radial directions as a function of the extent to which the implant is screwed into the hole. The threading is arranged to effect greater forcing out of the bone substance at the outer parts of the hole than at the inner parts of the hole. The degree of forcing out is adapted in relation to the softness of the bone in order to achieve the reliable anchoring. Along at least part of the longitudinal direction of the implant, the implant threading can be given a non-circular configuration for the purpose of obtaining improved rotational stability in soft/weak bone. The implant can also have two or more thread spirals/thread entries which shorten the time for screwing the implant into the hole and additionally offer tight threading which permits effective integration with the bone substance during the healing-in process.

